**Algebra 1 Name:**

**Unit 1 Test Study Guide – Part A Date:**

**Part 1A:** Identify the following: equation, expression, operation, term, variable

**Part 1B: Simplify** the following expressions. Put a **box** around your final answer.

|  |  |
| --- | --- |
|  | c) |
| b) | d) |

**Part 1C:** How would you write 2 • 2 • 2 • 2 • 2 in exponent form?

**Part 1D:** *x* • *x* • *x* • *x* =

* 1. 4x
  2. 4
  3. *x + x + x + x*

**Part 2: Exponents**

|  |  |  |
| --- | --- | --- |
| **Exponent Form** | **Expanded Form** | **Value** |
|  | 2 • 2 • 2 • 2 • 2 • 2 |  |
|  |  |  |
|  | 2 • 2 • 2 • 2 • 2 • 2 |  |
|  | 10 • 10 |  |
|  |  |  |
|  | 2 • 2 + 5 • 5 • 5 |  |
|  | *x* • *x* • *x* • *x* |  |
|  |  |  |

**Part 3: Writing Expressions**

|  |  |
| --- | --- |
| ***English*** | ***Algebra Expression*** |
| The sum of four and a number |  |
| The difference of two times a number and eight |  |
| Twenty divided by the sum of four and a number |  |

**Part 4: Evaluating Expressions**

**Directions:** Evaluate each expression if **a = 7**, **b = 6**, **c = 15**, **d = 3**, **e = 2**, and **f = 8**.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Part 5: Writing Equations**

**Directions:** write an equation that shows the **relationship** between the two variables. Then, **define** your variables

|  |  |  |
| --- | --- | --- |
| **Scenario** | **Relationship Equation** | **Define Your Variables** |
| A mechanical pencil costs four times as much as a regular pencil. |  |  |
| The total cost of your trip to the store is $2.05 for every pound of meat you bought. |  |  |
| You use rectangular tiles to build the edge of your new pool. Each tile is 8.75 inches long. What is the perimeter of your pool? |  |  |
| You’re on an African safari! At the watering hole, you notice that there are five times as many antelope as there are elephants. |  |  |
| Your hot water bill this month is for $26.75. What is the cost per gallon? *Hint: How many gallons of water did you use?* |  |  |
| If you run at a constant speed of 10 mph, your distance from home will be 10 times the number of hours you run. |  |  |

|  |  |  |
| --- | --- | --- |
| **Scenario** | **Variables** | **Relationship Equation** |
| |  |  | | --- | --- | | **# of hours of swimming** | **# of calories burned** | | 0.5 | 250 | | 1 | 500 | | 1.5 | 750 | | 2 | 1000 | |  |  |
| |  |  | | --- | --- | | **# of movies rented** | **Total Cost** | | 2 | $7 | | 3 | $10.50 | | 4 | $14 | | 5 | $17.50 | |  |  |
| |  |  | | --- | --- | | **# of minutes run** | **# of miles run** | | 27 | 3 | | 36 | 4 | | 45 | 5 | | 54 | 6 | |  |  |
| |  |  | | --- | --- | | **# of hours worked** | **Total Money Earned** | | 3 | $36 | | 5 | $60 | | 7 | $84 | | 9 | $108 | |  |  |